

resolution of the gray level white balance look up table.

15. A plasma display panel with a gray level white balance device comprising:

- 5 a color plasma display panel;
- a digital board, the digital board comprising:
 - 10 an image processor receiving image display signals;
 - a gray level white balance device receiving the image display signals from the image processor, the gray level white balance device modifying the image display signals to modified image display signals according to a gray level white balance look up table; and
 - 15 a display control circuit, the display control circuit comprising:
 - a scan sustainer coupling between the digital board and the color plasma display panel;
 - a scan driver integrated circuit coupling between the scan sustainer and the color plasma display panel;
 - 20 a bulk sustainer coupling between the digital board and the color plasma display panel, wherein the scan sustainer, the scan driver integrated circuit, and the bulk sustainer generate control signals to control the color plasma display panel; and
 - a data driver integrated circuit coupling between the digital board and the color plasma display panel to receive the modified image display signals and transmit to the color plasma display panel to display the modified image display signals.

25 16. The plasma display panel with a gray level white balance device of claim 15,

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wherein the digital board further comprises a microprocessor unit receiving a user selection signal to change the gray levels of the image display signals according to the user selection signal; and

5 17. The plasma display panel with a gray level white balance device of claim 16, wherein the digital board further comprises a de-contouring processing device coupling between the gray level white balance device and the display control circuit to process the modified image display signals with an error diffusion method to enhance a resolution of the modified image display signals.

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18. The plasma display panel with a gray level white balance device of claim 15, wherein the look up table is measured directly on the plasma display panel with color temperatures and color deviations to obtain the look up table with RGB gray level comparison.

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19. The plasma display panel with a gray level white balance device of claim 15, wherein the look up table further utilizes a curve fitting technology to enhance resolution of the look up table.

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20. The plasma display panel with a gray level white balance device of claim 15, wherein the look up table further utilizes a linear regression technology to enhance resolution of the look up table.

What is claimed is:

1. A plasma display panel with a gray level white balance device comprising:
 - 5 a digital board comprising a gray level white balance device, the digital board receiving image display signals and processing the image display signals, the gray level white balance device modifying gray levels of the image display signals and outputting modified image display signals;
 - 10 a display control circuit connecting with the digital board to receive the modified image display signals from the digital board and generate control signals; and a color plasma display panel receiving the control signals and the modified image display signals, and displaying the modified image display signals on the color plasma display panel according to the control signals.
- 15 2. The plasma display panel with a gray level white balance device of claim 1, wherein the digital board comprises:
 - 20 a microprocessor unit receiving a user selection signal and issuing a request to change the gray levels of the image display signals according to the user selection signal; and an image processor coupling with the microprocessor unit to receive the request and the image display signals and transfer the request and the image display signals to the gray level white balance device.
- 25 3. The plasma display panel with a gray level white balance device of claim 2, wherein the digital board further comprises a de-contouring processing device coupling

between the gray level white balance device and the display control circuit to process the modified image display signals with an error diffusion method to enhance a resolution of the modified image display signals.

5 4. The plasma display panel with a gray level white balance device of claim 1, wherein the gray level white balance further comprises a look up table.

10 5. The plasma display panel with a gray level white balance device of claim 4, wherein the look up table is measured directly on the plasma display panel with color temperatures and color deviations to obtain the look up table with RGB gray level comparison.

15 6. The plasma display panel with a gray level white balance device of claim 5, wherein the look up table further utilizes a curve fitting technology to enhance resolution of the look up table.

20 7. The plasma display panel with a gray level white balance device of claim 5, wherein the look up table further utilizes a linear regression technology to enhance resolution of the look up table.

25 8. The plasma display panel with a gray level white balance device of claim 1, wherein the display control circuit further comprises:

 a scan sustainer coupling between the digital board and the color plasma display panel;

 a scan driver integrated circuit coupling between the scan sustainer and the color

plasma display panel;

a bulk sustainer coupling between the digital board and the color plasma display panel, wherein the scan sustainer, the scan driver integrated circuit, and the bulk sustainer generate the control signals to control the color plasma display panel; and

5 a data driver integrated circuit coupling between the digital board and the color plasma display panel to receive the modified image display signals and transmit the modified image display signals to the color plasma display panel.

10 9. The plasma display panel with a gray level white balance device of claim 1, wherein the digital board further comprises a timing controller to provide timing signals for the digital board and the display control circuit.

15 10. A gray level white balance method, comprising:

measuring fundamental color gray levels of a plasma display panel;

obtaining a gray level white balance look up table;

providing image display signals;

modifying the image display signals according to the gray level white balance look up table; and

displaying the modified image display signals on the plasma display panel.

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11. The gray level white balance method of claim 10, wherein after the step of displaying the modified image display signals on the plasma display panel further comprises a step of enhancing the modified image display signals with an error diffusion method.

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12. The gray level white balance method of claim 10, wherein the step of measuring fundamental color gray levels of a plasma display panel further comprises:

- 5 determining a base color of fundamental colors;
- adjusting a gray level of the base color of the fundamental colors;
- adjusting gray levels of other colors of the fundamental colors;
- measuring a color temperature and a color deviation on the plasma display panel;
- determining whether the color temperature and the color deviation fit respective object values,
- 10 returning to the step of adjusting gray levels of other colors of the fundamental colors when the color temperature and the color deviation do not fit the respective object value, and
- recording the gray level of the base color and the gray levels of other colors when the color temperature and the color deviation fit the respective object value; and
- 15 returning to the step of adjusting a gray level of the base color of the fundamental colors until the gray level white balance look up table is obtained.

20 13. The gray level white balance method of claim 10, wherein the gray level white balance look up table further utilizes a curve fitting technology to enhance resolution of the gray level white balance look up table.

25 14. The gray level white balance method of claim 10, wherein the gray level white balance look up table further utilizes a linear regression technology to enhance